SUMMARY of selected IMPACT STUDIES

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Texas Water Development Program. "Socioeconomic Impacts." ***Water for Texas 2002*****. pp 119-121.**

The Texas Water Development Program developed an economic impact model that estimated to total economic losses related to water shortages statewide and by 16 geographic regions. Estimates of costs are broken down by a half-dozen different sectors.

Construction of Model:

benefit of unit of water consumption	x	water use	=	economic impact

The purpose is to generate summary economic loss figures to inform decisions makers about the magnitude of water scarcity's economic impact. The model translates economic growth projections into water use projections showing the magnitude of use conflicts 10, 30, and 50 years out.

"If the State does not ensure that there is enough water to meet projected needs, models project that there will be 7.4 million fewer jobs, 13.8 million fewer people, and 38 percent less income Statewide in 2050."

Pros and Cons:

- The press release results of this kind of economic model make good headlines.
- Despite the simple headlines, I didn't feel the report answered the question of whether Texans would be worse off economically. It said there would be fewer people and fewer jobs, but no claims are made about per capita income.
- This is a consumption model not taking into account the supply impacts of land use change.
- One of the simplifying assumptions is that conservation is ignored. The average water use per $1,000 income is constant within industries and over time.

Betsy Otto, Katherine Ransell, and Jason Todd of American Rivers; Deron Lovaas and Hannah Stutzman of Natural Resource Defense Council; and John Bailey of Smart Growth America. ***Paving Our Way to Water Shortages: How Sprawl Aggravates the Effects of Drought.*** **2002.**

This study estimates the water supply impacts of land development using regional average soil types and regional rainfall patterns. The Boston-Brocton-Nashua CMSA lost an estimated 43.9 billion to 102.5 billion gallons of annual water infiltration between 1982 and 1997 due to land development. 609,500 acres of land were developed and the range is based on 15% -35% of newly developed land being impervious.

Pros and Cons:

- This highly simplified approach allows an estimate of the water supply impact of land development at a regional scale.
- Authors acknowledge the complexity of local hydrology which is ignored

Spencer Philips. "Windfalls for Wilderness; Land Protection and Land Value in the Green Mountains." ***The Wilderness Society.*** **2000.**

Based on the analysis of 300,000 tax returns between 1987 and 1997, Phillips calculates that "parcels located in towns that contain wilderness have per-acre sales prices that are 13 percent higher than towns without wilderness." "The price of parcels decreased by 0.8 percent per acre with each kilometer farther way from the nearest wilderness boundary. Other things being equal, a parcel that sells for $1,000 per acre in a town without wilderness would be expected to sell for $1,130 per acre if it were in a town with wilderness. Similarly, if the $1,000/acre parcel could be moved to another town, the center of which is 10 kilometers farther way from a wilderness boundary, it would be expected to have a lower price of $923 per acre."

Pros and Cons:

- This approach is of interest to our project, because we want additional methods to value agriculture and open space beyond the income generated from the use of the property. Economic impact studies of water use find that agriculture uses a lot of water per unit of revenue generated, and this is probably true in Rhode Island as well.